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Ismaila Bojang, Maxim A. Medvedev, Kamen B. Spasov, and Arina I. Matvevnina



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# Determinants of Trust in B2C E-commerce and Their Relationship with Consumer Online Trust

Ismaila Bojang<sup>1,a)</sup>, Maxim A. Medvedev<sup>1,2,b)</sup>, Kamen B. Spasov<sup>3,c)</sup> and Arina I. Matvevnina<sup>1,d)</sup>

<sup>1</sup>*Ural Federal University, Mira st., 19, Yekaterinburg, RUSSIA*

<sup>2</sup>*Institute of Industrial Ecology UB RAS, Sofia Kovalevskaya st., 20, Yekaterinburg, RUSSIA*

<sup>3</sup>*Sofia University "St. Kliment Ohridski", Sofia, BULGARIA*

<sup>a)</sup> bojissbo@gmail.com

<sup>b)</sup> Corresponding author: medvedevmaa@gmail.com

<sup>c)</sup> kspasov@fmi.uni-sofia.bg

<sup>d)</sup> arina1000@yandex.ru

**Abstract:** The aim of this research was to investigate specific determinants or factors that influence consumer online trust in the B2C e-commerce with a focus on consumers. Constructs such as perceived security, perceived privacy, perceived third party assurance, perceived reputation, perceived familiarity and perceived website quality and their relationship with online trust in the B2C context were studied. In conducting the research, a convenience sampling technique was adopted in carrying out the survey. Questionnaires were distributed to the target respondents and the data were analyzed using SPSS version 24. A Pearson's correlation was used to test the six hypotheses identified in this study. The results provided evidence that perceived security has the greatest influence on online trust. This was followed closely by perceived reputation and finally perceived privacy. This clearly shows that e-commerce consumer population considers these factors very imperative in engendering their trust in the virtual B2C e-commerce environment.

**Keywords:** E-commerce trust, B2C e-commerce, perceived security, perceived reputation, perceived privacy.

## INTRODUCTION

Trust has been a complex and multidimensional concept that is difficult to define and measure (Rousseau et al. 1998) [1]. This had led to a diversity of trust conceptualizations and operationalisation in literature across disciplines, including e-commerce. Despite continued proliferation of commercial websites, many consumers perceive electronic commerce transactions to be riskier than traditional real world purchases (Metzger, 2006) [2]. E-commerce has emerged as one of the most important developments in business over the past decade (Iglesias-Pradas et al. 2013) [3] and has been subjected to numerous studies both in the past and recent times. While E-commerce has very successfully replaced conventional selling and brick and mortar stores, there are still some little differences that influences the way consumers perceive and behave towards the offerings of e-tailers (Liu et al. 2003) [4], and to this effect certain differences in the nature of services and products are fundamentally changed. Furthermore, Liu et al. (2003) suggested how an element of uncertainty is added to the buying process of products, as there is a delay between the purchasing, as well as the arrival and consumption of the product.

However, trust is one of the elements or factors that pose a threat to the establishment as well as the successful operation of E-commerce. Trust can be defined as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a specific action significant to the trustor, regardless of the ability to monitor or control that other party" (Mayer et al. 1995, p.712) [5]. In the meantime, notable heavy weights within the E-commerce academic domain found out that a lack of trust is still one of the

biggest concerns for Internet consumers and hence without trust, development of E-commerce cannot reach its full potential. Today e-commerce exists in many forms. Meanwhile, three of the most common types of e-commerce are found in business-to-business transactions (B2B), intra-business e-commerce and business-to-consumer (B2C) transactions.

Despite the huge amount of theoretical literature in the area of e-commerce trust, there is little empirical research or investigation that shows how all the dominant factors influence consumer trust. Hence, it goes to say that this study intends to develop an instrument to measure consumer perceptions of e-commerce trust with emphasis on the relationship between the customers and vendors. After reviewing the literature, we are of the belief that the area needs further empirical investigation to shed more light specifically on the area of determinants of trust in the virtual environment with a consumer focus approach. In order to bridge the gap, this research seeks to answer the research question - what are the dominant determinants of Russian consumer online trust? The goal of the research is to evaluate the influence of specific trust factors on the consumers, with a focus on Russian consumers.

Meanwhile, the lack of physical clues in the online market environment makes it difficult for potential customers to feel comfortable as they are constantly faced with situations where they have to establish the credibility and trustworthiness of the vendor, before they can make any buying decision. There are various problems associated with online shopping and the main ones includes; customers fear that their personal information will not be passed on to thirds parties, or that their credit card information may not be safe from hackers (Jarvenpaa et al. 2000) [6]. Every buyer is assumed rational in his/her purchase decisions, hence the need to be extra cautious when online purchases are involved. However, this atmosphere of uncertainty poses a serious challenge for online vendors, as they need to acquaint themselves with the factors that establish and promote consumer trust in E-commerce.

## RESEARCH MODEL AND HYPOTHESIS DEVELOPMENT

A comprehensive review of previous studies conducted in the area of E-commerce trust has led to the development of a cumulative construct for this empirical study. The hypothesis put forth in this study is divided into seven groups, which will be subjected to statistical examination to assess the veracity and validity of the constructs, regarding which specific factors engender customer trust in B2C e-commerce. A bivariate correlation statistics is used to test the hypothesis developed for this empirical study. In order to have a better understanding of the determinants of customer trust in the e-commerce environment, as well as seek to address the research questions previously highlighted above, a hypothesized model is developed for this study (Fig.1). This model adopts security, privacy, familiarity, website, guaranty, customer care, control and information as specific factors that determine customer trust. Components of the model and the support for its hypothesized links are shown in the figure below:

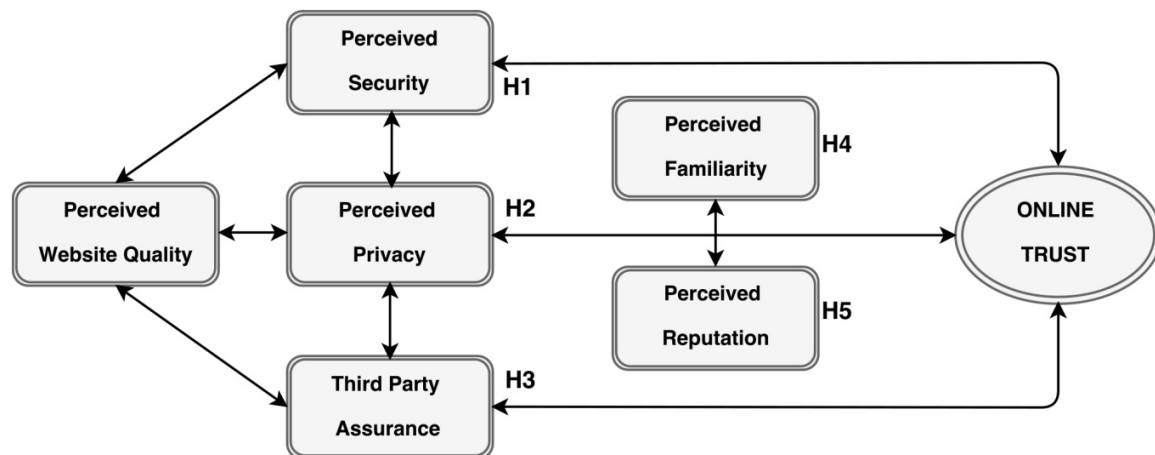


Figure 1. Hypothesized model of the determinants of consumer trust in B2C e-commerce

## HYPOTHESES STATEMENTS

- H1: The perceived security of online transactions will influence consumer online trust.  
H2: The perceived privacy of online transactions will influence consumer online trust.  
H3: Third party assurance/guarantees of online purchases and transactions will influence consumer online trust.  
H4: The perceived reputation of an online vendor will influence consumer online trust in that vendor.  
H5: The perceived familiarity with an online vendor will influence customer trust in that vendor.  
H6: The perceived website quality of an online vendor's site will influence consumer online trust.

## RELIABILITY TEST

A reliability test is quite imperative for the researcher to assess the relevance of the item scales used in the study (Table 1). A Cronbach's Alpha reliability score for perceived security was (0.941), perceived privacy (0.870), perceived third party assurance (0.943), perceived trust (0.940), perceived reputation (0.941), perceived website quality (0.882) and perceived familiarity (0.785).

**TABLE 1** - Cronbach's Alpha values obtained from the study

Construct Name	Number of Items	Cronbach's Alpha Value
Perceived Security	3	0.941
Perceived Privacy	5	0.870
Perceived Third Party Assurance	3	0.943
Perceived Trust	6	0.940
Perceived Reputation	3	0.941
Perceived Website Quality	3	0.882
Perceived Familiarity	3	0.785

## DATA COLLECTION TECHNIQUES

All the data collected for this study were obtained through a survey administered to measure specific variables that were identified for this study. The constructs under investigation include: security, privacy, familiarity, information, customer service, website and guaranty. The constructs were measured using multiple items designed by the researcher for the purpose of this study. The constructs were selected after a review of the previous literature. The items were measured using a seven point Likert scale ranging from (1) strongly disagree to (7) strongly agree. Meanwhile, the researcher uses a combination of two sources of data collection for this research which includes primary and secondary sources. The questionnaires were developed and administered to some selected respondents using convenience sampling techniques.

## PARTICIPANTS AND SAMPLING

This empirical study investigates the determinants of customer trust in a business-to-customer in the context of e-commerce. The study focused on the users of the internet with more emphasis on the Russian city of Yekaterinburg. Furthermore, this research targets mainly University, College students as well as those that graduated already from the

University as the population sample identified for this study. We selected mainly University students as main subjects of this study for the following reasons:

1. Majority of Internet users are generally younger and are more highly educated than conventional consumers, which makes University and College student samples closer to the online consumer population (McKnight et al. 2002) [7].
2. The majority of adult Internet users have a university education and this population represents the fastest growing group of internet users (Sexton et al. 2002) [8].

## RESEARCH RESULTS

In order to effectively and conveniently analyze the data, the IBM Statistical Package for Social Science (SPSS) software version 24 was used. To analyze the relationship between perceived security, perceived privacy, perceived reputation, perceived third party assurance, perceived website quality and perceived familiarity, several statistical techniques were used.

Pearson correlation analysis is used to assess the magnitude of linear association between two variables (Table 2). The correlation coefficient of all the constructs tested did not exceed 0.74 which shows that the constructs are disperse and do not overlap with each other.

**TABLE 2 - Correlation Summary of the determinants of B2C consumer online trust**

Constructs	Statistics	Online Trust
Perceived Security	Correlation	0.746
	Sig. (2-tailed)	0.000
Perceived Privacy	Correlation	0.657
	Sig. (2-tailed)	0.000
Perceived Third Party Assurance	Correlation	0.475
	Sig. (2-tailed)	0.000
Perceived Reputation	Correlation	0.695
	Sig. (2-tailed)	0.000
Perceived Familiarity	Correlation	0.039
	Sig. (2-tailed)	0.641
Perceived Website Quality	Correlation	0.343
	Sig. (2-tailed)	0.000

Table 3 shows that all the constructs used in this empirical study were statistically significant except the construct of familiarity. It recorded a correlation coefficient of 0.039 with a p-value of 0.641, which is greater than the acceptable p-value score of 0.05. Hence this shows that there is no statistical significance and consequently, it does not influence consumer online trust as far as Yekaterinburg's consumers are concerned. However, table 3 shows a summary of the hypotheses test conducted to assess and evaluate the level of influence each construct have on the dependent variable of consumer online trust. All the constructs were statistically significant with p-value scores of less than 0.05, thereby allowing us to confirm the hypotheses. Meanwhile, familiarity was the only construct that was not statistically significant and consequently we reject the hypothesis.

**TABLE 3 - Summary of the result of Hypotheses Test**

Hypotheses	Values Scored	Determination
<b>H<sub>1</sub></b> : The perceived security of online transactions will influence consumer online trust.	r = 0.746 p = 0.000 (p<0.05)	Supported
<b>H<sub>2</sub></b> : The perceived privacy of online transactions will influence consumer online trust.	r = 0.657 p = 0.000	Supported
<b>H<sub>3</sub></b> : Third party assurance/guarantees of online purchases and transactions will influence consumer online trust.	r = 0.475 p = 0.000 (p<0.05)	Supported
<b>H<sub>4</sub></b> : The perceived reputation of an online vendor will influence consumer online trust in that vendor.	r = 0.695 p = 0.000 (p<0.05)	Supported
<b>H<sub>5</sub></b> : The perceived familiarity with an online vendor will influence customer trust in that vendor.	r = 0.039 p = 0.641 (p>0.05)	Rejected
<b>H<sub>6</sub></b> : The perceived website quality of an online vendor's site will influence consumer online trust.	r = 0.343 p = 0.000 (p<0.05)	Supported

The objective of multiple regression analysis is to predict the single dependent variable by a set of independent variables. In addition to a Pearson's correlation analysis, a multiple regression analysis was conducted to further test the six hypotheses identified for this study. The results of analysis are presented below in Table 4 and Table 5.

**TABLE 4 - Stepwise Multiple Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.397	0.270		1.470	0.144
1 Perceived Security	0.783	0.059	0.746	13.334	0.000
(Constant)	-0.073	0.241		-2.212	0.832
2 Perceived Security	0.587	0.058	0.559	10.201	0.000
Perceived Privacy	0.335	0.047	0.390	7.106	0.000
(Constant)	-0.326	0.232		-1.405	0.162
3 Perceived Security	0.484	0.058	0.461	8.366	0.000
Perceived Privacy	0.232	0.049	0.270	4.729	0.000
Perceived Reputation	0.285	0.060	0.283	4.727	0.000

**TABLE 5 - Stepwise Regression strength of the Relationship. Model Summary (Stepwise method)**

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.746 <sup>a</sup>	0.556	0.553	0.919
2	0.820 <sup>b</sup>	0.673	0.668	0.791
3	0.847 <sup>c</sup>	0.718	0.712	0.737

The purpose of this research was to find out the dominant determinants of Russian consumer online trust. Six hypotheses statements were formulated and a Pearson's Bivariate Correlation Analysis was conducted to test them. The results of the Correlation analysis shows that perceived security has a significant positive influence on online trust scoring an  $\alpha=0.01$ ;  $p<0.05$ , which gives us substantial statistical evidence to confirm the hypothesis. Perceived security has a standardized regression coefficient  $\beta$  value of 0.461 which was the highest among the three predicting variables. This further indicates that Ekaterinburg's online consumers value perceived security of online transactions over the rest of the independent variables. An alpha ( $\alpha$ ) value of 0.01;  $p<0.05$ , was obtained for the variable perceived reputation. This result showed that perceived reputation has a significant positive influence on consumer online trust, enabling us to confirm the hypothesis. The reputation of an online vendor is likely to influence a buyer's trust towards a vendor. Meanwhile, a multiple regression analysis of the result also showed that perceived reputation is the second most influential factor that impacts on consumer online trust, with a standardized coefficient  $\beta$  value of 0.283. Furthermore, it also meant that Ekaterinburg's online consumers attaches great significance to the reputation of online vendors.

An alpha ( $\alpha$ ) value of 0.01;  $p<0.05$  was obtained after conducting a Correlation test for the variable of perceived privacy. The results of the test indicate that perceived privacy has a significant positive influence on consumer online trust. This finding is consistent with previous findings in the works of Petrovic (2003) and Dayal (1999) [9] where they stressed the significance of perceived privacy in inspiring consumer online trust. Moreover, a Pearson's correlation significant alpha ( $\alpha$ ) value of 0.01;  $p<0.05$  was obtained for the variable perceived third party assurance and  $\alpha=0.01$ ;  $p<0.05$  for perceived website quality. These results indicate that both values were less than the acceptable alpha value of 0.05, thereby giving us ample reason to confirm both hypotheses.

## CONCLUSION

As trust is a multidimensional concept and it is difficult to define or measure (Rousseau et al. 1998), this makes it imperative for online vendors to have an understanding of the behavior of consumers in relation to trust in the virtual environment. Meanwhile, the findings of this empirical study indicate that perceived security, perceived

reputation and perceived privacy are critical factors that significantly influence online trust in B2C e-commerce in Yekaterinburg, Russia. Other factors such as perceived third party assurance, perceived website quality also have a close association with online trust. In light of this, online retailers need to develop robust security solutions and strong firewalls to protect consumers' personal information from looming threats of cyber fraud and scam. This further implies that retailers should create websites that model simplicity yet incorporated with strong security mechanisms and slick designs that would engender consumer trust and by extension promote confidence in online transactions.

It is quite obvious that this research has some limitations such as:

1. The sample size is quite small as compared to the sample sizes used in previous studies. A convenience sample was used instead of a random one. Therefore, the results of this research may have representation issues as the sample size would not be sufficient enough to represent the population of Yekaterinburg.
2. The second limitation was that male and female respondents are not fairly represented. A total of 144 respondents of which 83(56.3%) are females, thereby making it gender biased.

The first recommendation is for the potential researcher to increase the sample size if he/she is to generate accurate, reliable data and results for generalization purposes. For the purpose of future research, the sample population could be increased to a range of 450-500 respondents.

In conducting future research, other variables should be considered in assessing their level of influence and association with consumer online trust. However, other trusting beliefs such as loyalty, reliability and openness were also suggested to be further investigated.

Going further, it will be imperative to adequately assess how determinants of trust and their relationship evolve over time bearing in mind the accumulation of overall consumer experience with time. Possible future research could look into the possibility of investigating when and why consumers are ready to buy from online retailers.

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